

SEQUENCE LISTING

<110> Billing-Medel, Patricia
Cohen, Maurice
Colpitts, Tracey
Friedman, Paula
Gordon, Julian
Granados, Ed
Hodges, Steve
Klass, Mike
Kratochvil, Jon
Russell, John
Stroupe, Steve

<120> Reagents and Methods Useful for
Detecting Diseases of the Breast

<130> 6451.US.P1

<160> 30

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 254

<212> DNA

<213> Homo sapiens

<220>

<221> base_polymorphism

<222> 94

<223> /note = "'n' represents an a or g or t or c polymorphism at
this position

<400> 1

gtatacattc tttattaatc attttgcttc caacccatt tagcctgcc	60
aaagtctgtt ccaaataaag ccttggaatt gaanaatgaa caaacattga	120
gatactccca tcagaatcca aacaaaagga ctatgaagaa agttcttggg	180
tctctgtgag actgtttcac agaaggatgt gtgtttaccc aaggctgcgc	240
aatagataaa ataa	254

<210> 2

<211> 278

<212> DNA

<213> Homo sapiens

<400> 2

gaaatgcaaa agtctgttcc aaataaagcc ttggaattga agaatgaaca	60
gcagatgaga tactcccatc agaatccaaa caaaaggact atgaagaaag	120
tctgagagtc tctgtgagac tgtttcacag aaggatgtgt gtttacc	180
caaaaagaaa tagataaaat aaatggaaaa ttagaagggc ctcctgttaa	240
ctgaaggcta actgcggaat gaaagtttct attccaac	278

<210> 3

<211> 294

<212> DNA

<213> Homo sapiens

<220>
 <221> base_polymorphism
 <222> 276
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<400> 3
 ttttgcttct gacagtttct ttttcagtac acaaaaacttc tttttcattt gttccatttt 60
 tctgtacgt tgttcacagt gatctttttg aagttccctt gctctttcac aagaatgaac 120
 tgtatccaag atttttgata ggctagttga atcttctaata tttccactta ttttatccat 180
 ttctttttga tgtgtagcct tgggtacaca cacatcctct gtgaaacagt ctcacggaga 240
 ctctcagaat cccaagaatt ttctcaacct tctttngttt tgattctgaa ggga 294

<210> 4
 <211> 248
 <212> DNA
 <213> Homo sapiens

<220>
 <221> base_polymorphism
 <222> 247
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<400> 4
 cagaatcaaaa acaaaaagaag gttgaagaaa attcttgagg ttctgagagt ctccgtgaga 60
 ctgtttcaca gaaggatgtg tgtgtaccca aggctacaca tcaaaaaagaa atggataaaa 120
 taagtggaaa attagaagat tcaactagcc tatcaaaaat cttggataca gttcattctt 180
 gtgaaagagc aagggaactt caaaaagatc actgtgaaca acgtacagga aaaatggaac 240
 aatgana 248

<210> 5
 <211> 254
 <212> DNA
 <213> Homo sapiens

<220>
 <221> base_polymorphism
 <222> 2
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<220>
 <221> base_polymorphism
 <222> 10
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<220>
 <221> base_polymorphism
 <222> 19
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<220>
 <221> base_polymorphism
 <222> 35
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<220>
 <221> base_polymorphism
 <222> 39
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<220>
 <221> base_polymorphism
 <222> 45
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<220>
 <221> base_polymorphism
 <222> 59
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<220>
 <221> base_polymorphism
 <222> 173
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<400> 5
 gngctctgcn gtgtgaggnt tctcacactc atganaatna aaatnatctc ttacatgana 60
 attgcatgtt gaaaaaggaa attgccatgc taaaactgga aatagccaca ctgaaacacc 120
 aataccagga aaaggaaaat aaatactttg aggacattaa gattttaaaa ganaagaatg 180
 ctgaacttca gatgacccta aaactgaaag aggaatcatt aactaaaagg gcacttcaat 240
 atagtgggca gctt 254

<210> 6
 <211> 267
 <212> DNA
 <213> Homo sapiens

<220>
 <221> base_polymorphism
 <222> 45
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<220>
 <221> base_polymorphism
 <222> 51
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<400> 6
 ttcaagaaaa agtcaagaac ctgctttcca cattgcagga gatgncttgt ntgcaaagaa 60
 aaatgaatgt tgatgtgagt agtacgatata ataacaatga ggtgctccat caaccacttt 120
 ctgaagctca aaggaaatcc aaaagcctaa aaattaatct caattatgcc ggagatgctc 180
 taagagaaaa tacattggtt tcagaacatg cacaaagaga ccaacgtgaa acacagtgtc 240
 aaatgaagga agctgaacac atgtatc 267

<210> 7
 <211> 240
 <212> DNA
 <213> Homo sapiens

<220>
 <221> base_polymorphism
 <222> 46
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<220>
 <221> base_polymorphism
 <222> 74
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<220>
 <221> base_polymorphism
 <222> 233
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<220>
 <221> base_polymorphism
 <222> 234
 <223> /note = "'n' represents an a or g or t or c polymorphism at
 this position

<400> 7
 cctaggcgcc tagtgaaacc ctgtgtcaaa aagaaaaaaa caaaancaaa cttccaagac 60
 ctcgagtggg tttnggagac cctgtatcac ttcaaataat gtgttaaaca agcatcttca 120
 tctcattaaa tagaaatggt gaaaaattgc ttttgggaata attgacttat ggatatttca 180
 tcaaatttac agttggctat gctttcttat tgtgcatact atgaaatggt ttnnttcatt 240

<210> 8
 <211> 2683
 <212> DNA
 <213> Homo sapiens

<400> 8
 agtatacatt ctttattaat cattttgctt ccaaccccat ttagcctgcc attgaaatgc 60
 aaaagtctgt tccaaataaa gccttggaat tgaagaatga acaaacattg agagcagatg 120
 agatactccc atcagaatcc aaacaaaagg actatgaaga aagttcttgg gattctgaga 180
 gtctctgtga gactgtttca cagaaggatg tgtgtttacc caaggctgcg catcaaaaag 240
 aaatagataa aataaatgga aaattagaag ggtctcctgt taaagatggg cttctgaagg 300
 ctaactgcgg aatgaaagtt tctattccaa ctaaagcctt agaattgatg gacatgcaaa 360
 ctttcaaagc agagcctccc gagaagccat ctgccttcga gcctgccatt gaaatgcaaa 420
 agtctgttcc aaataaagcc ttggaattga agaattgaaca aacattgaga gcagatgaga 480
 tactcccatc agaatccaaa caaaaggact atgaagaaag ttcttgggat tctgagagtc 540
 tctgtgagac tgtttcacag aaggatgtgt gtttacccaa ggctacacat caaaaagaaa 600
 tagataaaat aaatggaaaa ttagaagagt ctctgataa tgatgggttt ctgaaggctc 660
 cctgcagaat gaaagtttct attccaacta aagccttaga attgatggac atgcaaactt 720
 tcaaagcaga gcctcccag aagccatctg ccttcgagcc tgccattgaa atgcaaaagt 780
 ctgttccaaa taaagccttg gaattgaaga atgaacaaac attgagagca gatcagatgt 840
 tcccttcaga atcaaaacaa aagaacgttg aagaaaattc ttgggattct gagagtctcc 900
 gtgagactgt ttcacagaag gatgtgtgtg taccacaggc tacacatcaa aaagaaatgg 960
 ataaaataag tggaaaatta gaagattcaa ctagcctatc aaaaatcttg gatacaattc 1020
 attcttgtga aagagcaagg gaacttcaaa aagatcactg tgaacaatgt acaggaaaaa 1080
 tggaacaaat gaaaaagaag ttttgtgtac tgaaaaagaa actgtcagaa gcaaaagaaa 1140
 taaaatcaca gttagagaac caaaaagtta aatgggaaca agagctctgc agtgtgaggt 1200
ttctcact catgaaaatg aaaattatct cttacatgaa aattgcatgt tgaaaaagga 1260
 aattgccatg ctaaaactgg aaatagccac actgaaacac caataccagg aaaaggaaaa 1320
 taaatacttt gaggacatta agattttaaa agaaaagaat gctgaacttc agatgacctt 1380

aaáactgaaa	gaggaatcat	taactaaaag	ggcatctcaa	tatagtgggc	agcttaaagt	1440
tctgatagct	gagaacacaa	tgctcacttc	taaattgaag	gaaaaacaag	acaaagaaat	1500
actagaggca	gaaattgaat	cacaccatcc	tagactggct	tctgctgtac	aagaccatga	1560
tcaaattgtg	acatcaagaa	aaagtcaaga	acctgctttc	cacattgcag	gagatgcttg	1620
tttgcaaaga	aaaatgaatg	ttgatgtgag	tagtacgata	tataacaatg	aggtgctcca	1680
tcaaccactt	tctgaagctc	aaaggaaatc	caaaagccta	aaaattaatc	tcaattatgc	1740
aggagatgct	ctaagagaaa	atacattggg	ttcagaacat	gcacaaagag	accaacgtga	1800
aacacagtg	caaatagaag	aagctgaaca	catgtatcaa	aacgaacaag	ataatgtgaa	1860
caaacacact	gaacagcagg	agtctctaga	tcagaaatta	tttcaactac	aaagcaaaaa	1920
tatgtggctt	caacagcaat	tagttcatgc	acataagaaa	gctgacaaca	aaagcaagat	1980
aacaattgat	attcattttc	ttgagaggaa	aatgcaacat	catctcctaa	aagagaaaaa	2040
tgaggagata	tttaattaca	ataaccattt	aaaaaacgt	atataatcaat	atgaaaaaga	2100
gaaagcagaa	acagaaaact	catgagagac	aagcagtaag	aaacttcttt	tggagaaaca	2160
acagaccaga	tctttactca	caactcatgc	taggaggcca	gtcctagcat	caccttatgt	2220
tgaaaatctt	accaatagtc	tgtgtcaaca	gaatacttat	tttagaagaa	aaattcatga	2280
tttcttcctg	aagcctacag	acataaaaata	acagtgtgaa	gaattacttg	ttcacgaatc	2340
tcgctctgca	ctccagccta	ggcgcctagt	gaaaccctgt	gtcaaaaaga	aaaaaacaaa	2400
aacaaaactt	caagacctcg	agtggttttt	ggagaccctg	tatcacttca	aataatgtgt	2460
taaacaagca	tcttcacttc	attaaataga	aatgttgaaa	aattgctttt	ggaataattg	2520
acttatggat	atttcacaa	atttacagtt	ggctatgctt	tcttattgtg	catactatga	2580
aatgtttttc	ttcaaaaagt	gtttataagt	ggtaagttta	agaatggggt	tgacagcatt	2640
atcttttgtg	gttatttgat	taaacattta	ctaattgtgc	ata		2683

<210> 9

<211> 2683

<212> DNA

<213> Homo sapiens

<400> 9

agtatacatt	ctttattaat	cattttgctt	ccaaccccat	ttagcctgcc	attgaaatgc	60
aaaagtctgt	tccaaataaa	gccttggaat	tgaagaatga	acaaacattg	agagcagatg	120
agatactccc	atcagaatcc	aaacaaaagg	actatgaaga	aagttcttgg	gattctgaga	180
gtctctgtga	gactgtttca	cagaaggatg	tgtgtttacc	caaggctgcg	catcaaaaag	240
aaatagataa	aataaatgga	aaattagaag	ggctctcctgt	ttaaagatgg	cttctgaagg	300
ctaactgcgg	aatgaaagtt	tctattccaa	ctaaagcctt	agaattgatg	gacatgcaaa	360
ctttcaaagc	agagcctccc	gagaagccat	ctgccttcga	gcctgccatt	gaaatgcaaa	420
agtctgttcc	aaataaagcc	ttggaattga	agaatgaaca	aacattgaga	gcagatgaga	480
tactcccatc	agaatccaaa	caaaaaggact	atgaagaaag	ttcttgggat	tctgagagtc	540
tctgtgagac	tgtttcacag	aaggatgtgt	gtttacccaa	ggctacacat	caaaaagaaa	600
tagataaaat	aaatgaaaaa	ttagaagagt	ctcctgataa	tgatggtttt	ctgaaggctc	660
cctgcagaat	gaaagtttct	attccaacta	aagccttaga	attgatggac	atgcaaaact	720
tcaaagcaga	gcctcccag	aagccatctg	ccttcgagcc	tgccattgaa	atgcaaaagt	780
ctgttccaaa	taaagccttg	gaattgaaga	atgaacaaac	attgagagca	gatcagatgt	840
tcccttcaga	atcaaaacaa	aagaacgttg	aagaaaattc	ttgggattct	gagagtctcc	900
gtgagactgt	ttcacagaag	gatgtgtgtg	tacccaaggc	tacacatcaa	aaagaaatgg	960
ataaaaataag	tggaaaatta	gaagattcaa	ctagcctatc	aaaaatcttg	gatacaattc	1020
attcttgtga	aagagcaagg	gaacttcaaa	aagatcactg	tgaacaatgt	acaggaaaaa	1080
tggaacaaat	gaaaaagaag	ttttgtgtac	tgaaaaagaa	actgtcagaa	gcaaaagaaa	1140
taaaatcaca	gttagagaac	caaaaagtta	aatgggaaca	agagctctgc	agtgtgaggt	1200
ttctcacact	catgaaaatg	aaaattatct	cttacatgaa	aattgcatgt	tgaaaaagga	1260
aattgccatg	ctaaaactgg	aaatagccac	actgaaacac	caataccagg	aaaaggaaaa	1320
taaatacttt	gaggacatta	agatttttaa	agaaaagaat	gctgaacttc	agatgaccct	1380
aaaactgaaa	gaggaatcat	taactaaaag	ggcatctcaa	tatagtgggc	agcttaaagt	1440
tctgatagct	gagaacacaa	tgctcacttc	taaattgaag	gaaaaacaag	acaaagaaat	1500
actagaggca	gaaattgaat	cacaccatcc	tagactggct	tctgctgtac	aagaccatga	1560
tcaaattgtg	acatcaagaa	aaagtcaaga	acctgctttc	cacattgcag	gagatgcttg	1620
tttgcaaaga	aaaatgaatg	ttgatgtgag	tagtacgata	tataacaatg	aggtgctcca	1680
tcaaccactt	tctgaagctc	aaaggaaatc	caaaagccta	aaaattaatc	tcaattatgc	1740
aggagatgct	ctaagagaaa	atacattggg	ttcagaacat	gcacaaagag	accaacgtga	1800

aacacagtg	caa	aatgaagg	aagctgaaca	catgtatcaa	aacgaacaag	ataatgtgaa	1860
caaacacact	gaacagcagg	agtctctaga	tcagaaatta	tttcaactac	aaagcaaaaa		1920
tatgtggctt	caacagcaat	tagttcatgc	acataagaaa	gctgacaaca	aaagcaagat		1980
aacaattgat	attcattttc	ttgagaggaa	aatgcaacat	catctcctaa	aagagaaaaa		2040
tgaggagata	tttaattaca	ataaccattt	aaaaaaccgt	atatatcaat	atgaaaaaga		2100
gaaagcagaa	acagaaaact	catgagagac	aagcagtaag	aaacttcttt	tggagaaaca		2160
acagaccaga	tctttactca	caactcatgc	taggaggcca	gtcctagcat	caccttatgt		2220
tgaaaatctt	accaatagtc	tgtgtcaaca	gaatacttat	tttagaagaa	aaattcatga		2280
tttcttcctg	aagcctacag	acataaaaata	acagtgtgaa	gaattacttg	ttcacgaatc		2340
tcgctctgca	ctccagccta	ggcgccctagt	gaaaccctgt	gtcaaaaaga	aaaaaacaaa		2400
aacaaacttc	caagacctcg	agtggttttt	ggagaccctg	tatcacttca	aataatgtgt		2460
taaacaagca	tcttcatttc	attaaataga	aatggttgaaa	aattgctttt	ggaataattg		2520
acttatggat	atttcacaa	atttacagtt	ggctatgctt	tcttattgtg	catactatga		2580
aatgtttttc	ttcaaaaagt	gtttataagt	ggtaagttta	agaatggggg	tgacagcatt		2640
atcttttgtg	gttatttgat	taaacattta	ctaattgtgc	ata			2683

<210> 10
 <211> 68
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Restriction site

<400> 10	
agctcggaat tccgagcttg gatcctctag agcggccgcc gactagttag ctcgtcgacc	60
cggaatt	68

<210> 11
 <211> 68
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Restriction site

<400> 11	
aattaattcc cgggtcgacg agctcactag tcggcgggccg ctctagagga tccaagctcg	60
gaattccg	68

<210> 12
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Universal primer

<400> 12	
agcggataac aatttcacac agga	24

<210> 13
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Universal primer

<400> 13		
tgtaaaacga cggccagt		18
<210> 14		
<211> 20		
<212> DNA		
<213> Homo sapiens		
<400> 14		
ctcccatcag aatccaaaca		20
<210> 15		
<211> 20		
<212> DNA		
<213> Homo sapiens		
<400> 15		
ggcagaaatt gaatcacacc		20
<210> 16		
<211> 18		
<212> DNA		
<213> Homo sapiens		
<400> 16		
tcacgaatct cgctctgc		18
<210> 17		
<211> 19		
<212> DNA		
<213> Homo sapiens		
<400> 17		
gaccaacgtg aaacacagt		19
<210> 18		
<211> 18		
<212> DNA		
<213> Homo sapiens		
<400> 18		
ttttctgaag gctccctg		18
<210> 19		
<211> 20		
<212> DNA		
<213> Homo sapiens		
<400> 19		
tgtctgtagg cttcaggaag		20
<210> 20		
<211> 20		
<212> DNA		
<213> Homo sapiens		
<400> 20		
cctctttcag ttttagggtc		20

<210> 21
 <211> 19
 <212> DNA
 <213> Homo sapiens

<400> 21
 cagaagccag tctaggatg 19

<210> 22
 <211> 20
 <212> DNA
 <213> Homo sapiens

<400> 22
 gtaggcttca ggaagaaatc 20

<210> 23
 <211> 19
 <212> DNA
 <213> Homo sapiens

<400> 23
 ttccgcagtt agccttcag 19

<210> 24
 <211> 398
 <212> PRT
 <213> Homo sapiens

<400> 24
 Met Gln Lys Ser Val Pro Asn Lys Ala Leu Glu Leu Lys Asn Glu Gln
 1 5 10 15
 Thr Leu Arg Ala Asp Glu Ile Leu Pro Ser Glu Ser Lys Gln Lys Asp
 20 25 30
 Tyr Glu Glu Ser Ser Trp Asp Ser Glu Ser Leu Cys Glu Thr Val Ser
 35 40 45
 Gln Lys Asp Val Cys Leu Pro Lys Ala Ala His Gln Lys Glu Ile Asp
 50 55 60
 Lys Ile Asn Gly Lys Leu Glu Gly Ser Pro Val Lys Asp Gly Leu Leu
 65 70 75 80
 Lys Ala Asn Cys Gly Met Lys Val Ser Ile Pro Thr Lys Ala Leu Glu
 85 90 95
 Leu Met Asp Met Gln Thr Phe Lys Ala Glu Pro Pro Glu Lys Pro Ser
 100 105 110
 Ala Phe Glu Pro Ala Ile Glu Met Gln Lys Ser Val Pro Asn Lys Ala
 115 120 125
 Leu Glu Leu Lys Asn Glu Gln Thr Leu Arg Ala Asp Glu Ile Leu Pro
 130 135 140
 Ser Glu Ser Lys Gln Lys Asp Tyr Glu Glu Ser Ser Trp Asp Ser Glu
 145 150 155 160
 Ser Leu Cys Glu Thr Val Ser Gln Lys Asp Val Cys Leu Pro Lys Ala
 165 170 175
 Thr His Gln Lys Glu Ile Asp Lys Ile Asn Gly Lys Leu Glu Glu Ser
 180 185 190
 Pro Asp Asn Asp Gly Phe Leu Lys Ala Pro Cys Arg Met Lys Val Ser
 195 200 205
 Ile Pro Thr Lys Ala Leu Glu Leu Met Asp Met Gln Thr Phe Lys Ala
 210 215 220

Glu	Pro	Pro	Glu	Lys	Pro	Ser	Ala	Phe	Glu	Pro	Ala	Ile	Glu	Met	Gln
225					230					235					240
Lys	Ser	Val	Pro	Asn	Lys	Ala	Leu	Glu	Leu	Lys	Asn	Glu	Gln	Thr	Leu
				245					250					255	
Arg	Ala	Asp	Gln	Met	Phe	Pro	Ser	Glu	Ser	Lys	Gln	Lys	Asn	Val	Glu
			260					265					270		
Glu	Asn	Ser	Trp	Asp	Ser	Glu	Ser	Leu	Arg	Glu	Thr	Val	Ser	Gln	Lys
		275					280					285			
Asp	Val	Cys	Val	Pro	Lys	Ala	Thr	His	Gln	Lys	Glu	Met	Asp	Lys	Ile
	290					295				300					
Ser	Gly	Lys	Leu	Glu	Asp	Ser	Thr	Ser	Leu	Ser	Lys	Ile	Leu	Asp	Thr
305					310					315					320
Ile	His	Ser	Cys	Glu	Arg	Ala	Arg	Glu	Leu	Gln	Lys	Asp	His	Cys	Glu
				325					330					335	
Gln	Cys	Thr	Gly	Lys	Met	Glu	Gln	Met	Lys	Lys	Lys	Phe	Cys	Val	Leu
			340					345					350		
Lys	Lys	Lys	Leu	Ser	Glu	Ala	Lys	Glu	Ile	Lys	Ser	Gln	Leu	Glu	Asn
		355					360					365			
Gln	Lys	Val	Lys	Trp	Glu	Gln	Glu	Leu	Cys	Ser	Val	Arg	Phe	Leu	Thr
	370					375					380				
Leu	Met	Lys	Met	Lys	Ile	Ser	Tyr	Met	Lys	Ile	Ala	Cys			
385					390				395						

```
<210> 25
<211> 317
<212> PRT
<213> Homo sapiens
```

	<400>						25														
Met	Gly	Thr	Arg	Ala	Leu	Gln	Cys	Glu	Val	Ser	His	Thr	His	Glu	Asn						
1				5					10					15							
Glu	Asn	Tyr	Leu	Leu	His	Glu	Asn	Cys	Met	Leu	Lys	Lys	Glu	Ile	Ala						
			20					25					30								
Met	Leu	Lys	Leu	Glu	Ile	Ala	Thr	Leu	Lys	His	Gln	Tyr	Gln	Glu	Lys						
		35					40					45									
Glu	Asn	Lys	Tyr	Phe	Glu	Asp	Ile	Lys	Ile	Leu	Lys	Glu	Lys	Asn	Ala						
	50					55					60										
Glu	Leu	Gln	Met	Thr	Leu	Lys	Leu	Lys	Glu	Glu	Ser	Leu	Thr	Lys	Arg						
65					70					75					80						
Ala	Ser	Gln	Tyr	Ser	Gly	Gln	Leu	Lys	Val	Leu	Ile	Ala	Glu	Asn	Thr						
				85					90					95							
Met	Leu	Thr	Ser	Lys	Leu	Lys	Glu	Lys	Gln	Asp	Lys	Glu	Ile	Leu	Glu						
			100					105					110								
Ala	Glu	Ile	Glu	Ser	His	His	Pro	Arg	Leu	Ala	Ser	Ala	Val	Gln	Asp						
		115					120					125									
His	Asp	Gln	Ile	Val	Thr	Ser	Arg	Lys	Ser	Gln	Glu	Pro	Ala	Phe	His						
	130					135				140											
Ile	Ala	Gly	Asp	Ala	Cys	Leu	Gln	Arg	Lys	Met	Asn	Val	Asp	Val	Ser						
145				150						155					160						
Ser	Thr	Ile	Tyr	Asn	Asn	Glu	Val	Leu	His	Gln	Pro	Leu	Ser	Glu	Ala						
				165					170					175							
Gln	Arg	Lys	Ser	Lys	Ser	Leu	Lys	Ile	Asn	Leu	Asn	Tyr	Ala	Gly	Asp						
			180					185					190								
Ala	Leu	Arg	Glu	Asn	Thr	Leu	Val	Ser	Glu	His	Ala	Gln	Arg	Asp	Gln						
		195					200					205									
Arg	Glu	Thr	Gln	Cys	Gln	Met	Lys	Glu	Ala	Glu	His	Met	Tyr	Gln	Asn						
	210					215					220										
Glu	Gln	Asp	Asn	Val	Asn	Lys	His	Thr	Glu	Gln	Glu	Ser	Leu	Asp							
225				230						235					240						

<400> 29
Asp Tyr Lys Asp Asp Asp Asp Lys
1 5

<210> 30
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Affinitiy purification system recognition site

<400> 30
Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Asn Met His Thr Glu His
1 5 10 15
His His His His His
20